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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/792,090	03/04/2004	Dong-Hoon Kim	6192.0331.US	4090

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MCGUIREWOODS, LLP
1750 TYSONS BLVD
SUITE 1800
MCLEAN, VA 22102

EXAMINER	
HAN, JASON	
ART UNIT	**PAPER NUMBER**
2875	

DATE MAILED: 11/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/792,090	KIM ET AL.	
	Examiner	Art Unit	
	Jason M. Han	2875	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following claims have been rejected in light of the specification, but rendered the broadest interpretation as construed by the Examiner [MPEP 2111].

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

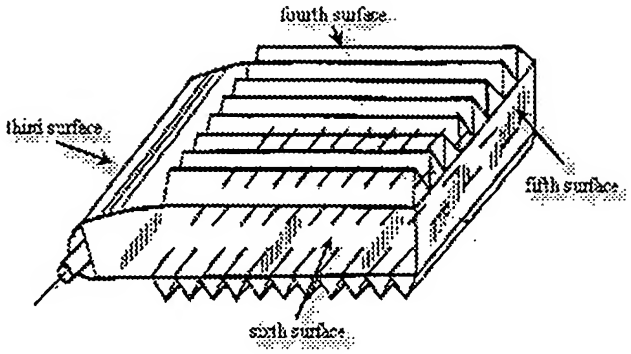
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-5 and 12-16 are rejected under 35 U.S.C. 102(b) as being anticipated by Tai (U.S. Patent 5854872).

2. With regards to Claim 1, Tai discloses a light guide plate including:

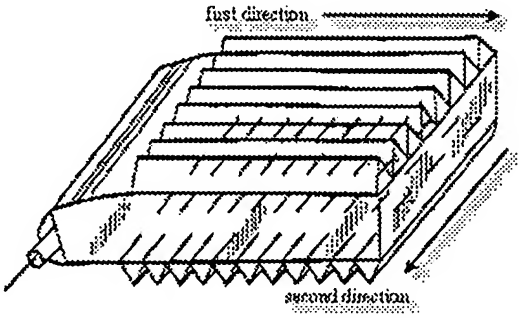
   - A first surface [Figure 12: (16)] having a first light control pattern; and
   - A second surface [Figure 12: (94)] having a second light control pattern,
   - Wherein the first surface faces the second surface [Figure 12].

3. With regards to Claim 2, Tai discloses the light guide plate having a third surface, fourth surface, fifth surface, and sixth surface [see Figure below].



4. With regards to Claim 3, Tai discloses the first light control pattern being a first prism pattern [Figure 12: (16); Column 11, Lines 27-31].

5. With regards to Claim 4, Tai discloses the first prism pattern including a plurality of first prisms aligned in a row to a first direction [see Figure below].

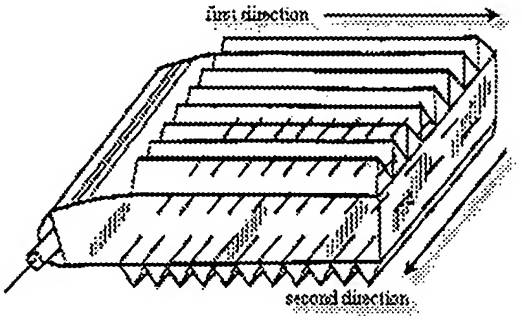


6. With regards to Claim 5, Tai discloses the plurality of first prisms [Figure 12: (16); Column 11, Lines 27-31] having a triangular cross-section shape.

7. With regards to Claim 12, Tai discloses at least one of the third surface, the fourth surface, the fifth surface, and the sixth surface being a light incident surface [see Figure above – note the third surface].

8. With regards to Claim 13, Tai discloses the second light control pattern being a second prism pattern [Figure 12: (94); Column 9, Lines 59-61].

9. With regards to Claim 14, Tai discloses the second prism pattern including a plurality of second prisms aligned in a row to a second direction [see Figure below].



10. With regards to Claim 15, Tai discloses the second direction being parallel with the light incident surface [see Figure above].

11. With regards to Claim 16, Tai discloses the first light control pattern including a first prism pattern with a plurality of first prisms [Figure 12: (16); Column 11, Lines 27-31] aligned in a row to a first direction, and wherein the first direction is perpendicular to the second direction [see Figure above].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (U.S. Patent 5854872).

Tai discloses the claimed invention as cited above, but does not specifically teach the triangular cross-sectional shape being an equilateral triangle (vertex angle = 60°) [re: Claim 6]; the triangular cross-sectional shape having a vertex angle ranging between 100° and 120° [re: Claim 7]; nor teaches the vertex angle being 108° [re: Claim 8].

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the plurality of first prisms into equilateral triangles (60°) or to have a vertex angle of 108°, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215. It also would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the plurality of first prisms to incorporate a vertex angle between 100° and 120°, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, choosing an optimum vertex angle or range will allow for the illumination to exit at desired directions. It is also obvious that the vertex angle is not a major patentable distinction of the invention given the various and broad angles claimed.

13. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (U.S. Patent 5854872) as applied to Claim 5 above, and further in view of Large (U.S. Patent 6043936).

Tai discloses the claimed invention as cited above, but does not specifically teach the plurality of first prisms having a first prism surface and a second prism surface, wherein the first and second prism surfaces include a concavo-convex pattern [re: Claim 9]; wherein the concavo-convex pattern has a triangular prism shape [re: Claim 10]; nor wherein the concavo-convex pattern has a rounded corner [re: Claim 11].

Large teaches a light guide plate having a plurality of first prisms [Figure 1: (2)] including first and second prism surfaces [Figures 1&4: (5)] with concavo-convex patterns. In addition, Large teaches the concavo-convex pattern being a triangular prism shape, but does not specifically teach said pattern having a rounded corner. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the concavo-convex pattern to have a rounded corner, since it has been held to be within the general skill of a worker that mere change of form or shape of an invention involves only routine skill in the art. *Span-Deck Inc. c. Fab-Con, Inc. (CA 8, 1982)* 215USPQ 835. In this case, providing a rounded corner would produce a different or desired optical effect.

It also would have been obvious to one ordinarily skilled in the art at the time of invention to modify the plurality of first prisms of Tai to incorporate the first and second prism surfaces with various concavo-convex patterns, as taught by Large, in order to provide appropriate diffusion/diffraction over a wide range of viewing and illumination angles [see Abstract of Large].

14. Claims 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (U.S. Patent 5854872) in view of Katsu et al. (U.S. Patent 6692133).

15. With regards to Claim 17, Tai teaches a liquid crystal display including;

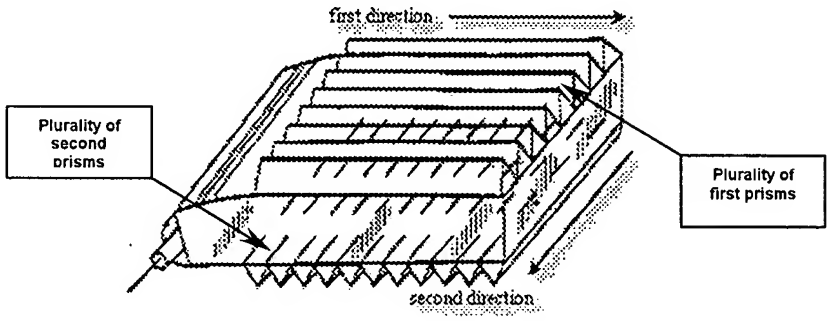
- A liquid crystal display panel [Column 1, Lines 22-31]; and
- A backlight assembly [Figure 12; Column 1, Lines 22-31] further including:
  - = A light guide plate [Figure 12]comprising:
    - A first surface [Figure 12: (16)] having a first light control pattern; and
    - A second surface [Figure 12: (94)] having a second light control pattern,
    - Wherein the first surface faces the second surface [Figure 12].

Tai does not specifically teach a module that accommodates the liquid crystal display panel and the backlight assembly.

Katsu teaches a liquid crystal display including a module [Figure 1: (11, 17)] that accommodates a liquid crystal display panel [Figure 1: (13)] and a backlight assembly [Figure 1: (10)].

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the liquid crystal display of Tai to incorporate the module of Katsu in order to provide a robust LCD package that houses and protects the various components (i.e., LCD panel, backlight assembly).

16. With regards to Claim 18, Tai in view of Katsu discloses the claimed invention as cited above. In addition, Tai teaches the first light control pattern being a first prism pattern including a plurality of first prisms aligned in a row to a first direction [see Figure below], wherein the second light control pattern is a second prism pattern including a plurality of second prisms aligned in a row to a second direction [see Figure below], whereby the first direction is perpendicular to the second direction [see Figure below].



17. With regards to Claim 19, Tai in view of Katsu discloses the claimed invention as cited above. In addition, Tai teaches the plurality of first prisms [Figure 12: (16); Column 11, Lines 27-31] having a triangular cross-section shape, but does not specifically teach the triangular cross-sectional shape having a vertex angle ranging between 100° and 120°.

However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the plurality of first prisms to incorporate a vertex angle between 100° and 120°, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, choosing an optimum vertex angle range will allow

for the illumination to exit at desired directions. It is also obvious that the vertex angle is not a major patentable distinction of the invention given the various and broad angles claimed prior.

18. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (U.S. Patent 5854872) in view of Katsu et al. (U.S. Patent 6692133) as applied to Claim 18 above, and further in view of Large (U.S. Patent 6043936).

Tai in view of Katsu discloses the claimed invention as cited above, but does not specifically teach the plurality of first prisms having a first prism surface and a second prism surface, wherein the first and second prism surfaces include a concavo-convex pattern.

Large teaches a light guide plate having a plurality of first prisms [Figure 1: (2)] including first and second prism surfaces [Figures 1&4: (5)] with concavo-convex patterns.

It would have been obvious to one ordinarily skilled in the art at the time of invention to modify the plurality of first prisms of Tai in view of Katsu to incorporate the first and second prism surfaces with various concavo-convex patterns, as taught by Large, in order to provide appropriate diffusion/diffraction over a wide range of viewing and illumination angles [see Abstract of Large].

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art pertinent to the current application, but are not considered exhaustive:

US Patent 5600455 to Ishikawa et al; US Patent 5999685 to Goto et al;

US Patent 6454452 to Sasagawa et al ; US Patent 6798574 to Kim.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Han whose telephone number is (571) 272-2207. The examiner can normally be reached on 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JMH (11/15/2005)

Stephen Husar
Primary Examiner